

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
10 July 2003 (10.07.2003)

PCT

(10) International Publication Number
WO 03/055653 A1

(51) International Patent Classification⁷: **B25J 9/10**

(21) International Application Number: PCT/GB02/05943

(22) International Filing Date:
30 December 2002 (30.12.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
20010145160 31 December 2001 (31.12.2001) CN

(71) Applicants (for all designated States except US): **TIANJIN UNIVERSITY** [CN/CN]; No. 9 Building Tianjin University, Tianjin 300072 (CN). **UNIVERSITY OF WARWICK** [GB/GB]; Gibbet Hill Road, Coventry CV4 7AL (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HUANG, Tian** [CN/CN]; Tianjin University, No. 9 Building Tianjin

University, Tianjin 300072 (CN). **LI, Meng** [CN/CN]; Tianjin University, No. 9 Building Tianjin University, Tianjin 300072 (CN). **LI, Zhanxian** [CN/CN]; Tianjin University, No. 9 Building Tianjin University, Tianjin 300072 (CN). **CHETWYND, Derek G.** [GB/GB]; University of Warwick, Gibbet Hill Road, Coventry CV4 7AL (GB). **WHITEHOUSE, David J.** [GB/GB]; University of Warwick, Gibbet Hill Road, Coventry CV4 7AL (GB).

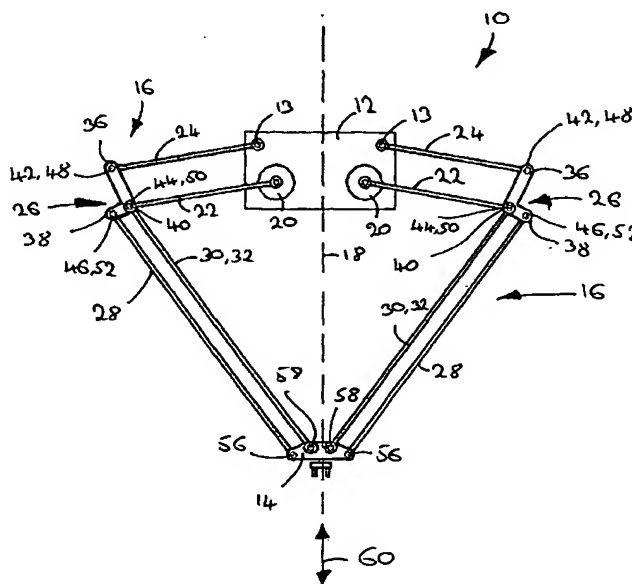
(74) Agents: **GRAY, James et al.**; Withers & Rogers, Goldings House, 2 Hays Lane, London SE1 2HW (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: PLANAR PARALLEL ROBOT MECHANISM WITH TWO TRANSLATIONAL DEGREES OF FREEDOM



(57) Abstract: A linkage mechanism for a pick and place robot comprises two rotatable drive members (20) mounted on a base (12) and connected to a platform (14) by a respective two element linkage (22, 30). The mid point of the two element linkage has a bell crank (26), the arms of which are connected to first and second location links (24, 28) anchored respectively at the base and platform. The platform may be configured to carry various implements, and the mechanism permits movement thereof in two dimensions by selective rotation of the drive members (20).

WO 03/055653 A1